WE CLAIM:

1. A method comprising:

contacting a first component and a second component with a nanoporous structure; and

producing a product from a reaction of the first component with the second component.

2. The method of claim 1 further including incubating the first component with the second component.

3. The method of claim 2 wherein incubating includes waiting for a first period of time which is less than a period of time allotted for reacting the first component with the second component using a non-nanoporous structure.

4. The method of claim 1 further comprising mixing the first component with the second component.

5. The method of claim 1 further comprising immobilizing the first component to the nanoporous structure.

6. The method of claim 1 wherein contacting the first component and the second component with the nanoporous structure includes increasing an effective concentration.

7. The method of claim 1 further comprising adjusting a kinetic characteristic.

8. The method of claim 7 wherein adjusting a kinetic charac ncludes adjusting a temperature, adjusting a concentration, adjusting a time period, adjusting a pH, adjusting a volume, adjusting a pressure, adjusting a diffusion rate, adjusting a material characteristic, adjusting an atmospheric humidity or adjusting a light exposure.

9. The method of claim 1 further comprising measuring a kinetic characteristic.

10. The method of claim 9 wherein measuring a kinetic characteristic includes measuring a temperature, measuring a concentration, measuring a time period, measuring a pH, measuring a volume, measuring a pressure, measuring a diffusion rate, measuring a material characteristic, measuring an atmospheric humidity or measuring a light sensitivity.

11. The method of claim 1 wherein contacting the first component with the nanoporous structure includes contacting a catalyst with the nanoporous structure.

12. The method of claim 11 wherein contacting the catalyst includes contacting an enzyme, contacting a platinum powder, or contacting a metal complex.

13. The method of claim 12 wherein contacting the enzyme includes contacting a restriction enzyme, contacting a ligase, contacting a polymerase, contacting a kinase, contacting an amylase, contacting an esterase, contacting a dehydrogenase, contacting a transferase, contacting a synthetase, contacting a synthase, contacting a polymerase, contacting a carboxylase, contacting a reductase, contacting a phosphorylase, contacting a phosphotransferase, contacting an aminotransferase, contacting an oxidase, contacting an isomerase, contacting a deamidase, contacting a fumarase, contacting an anhydrase, contacting a dismutase, contacting a peptidase, contacting an aldolase, contacting an enolase, contacting a luciferase, contacting a urease, contacting a galactosidase, contacting a transcarbamylase, contacting a glucosidase, contacting a glucanase, contacting an endonuclease or contacting an exonuclease.

14. The method of claim 11 wherein contacting the catalyst includes contacting cobalt, contacting nickel, contacting palladium, contacting osmium or contacting iridium.

15. The method of claim 1 further comprising contacting a third component with the nanoporous structure.

16. The method of claim 1 wherein contacting a first component includes contacting an antibody, contacting an antigen, contacting a receptor, contacting a substrate, contacting a protein, contacting an amino acid, contacting a nucleic acid, contacting a nucleotide, contacting a lipid, contacting a fatty acid, contacting a carbohydrate, contacting a hydrocarbon, contacting a cofactor, contacting a redox reagent, contacting an acid, contacting a base, contacting a cellular fraction, contacting a subcellular fraction, contacting a virus sample, contacting a fragment of a virus, contacting a buffer, contacting water or contacting an organic solvent.

17. The method of claim 1 wherein producing the product includes producing a modified nucleic acid, a nucleotide, an amplified nucleic acid fragment/sequence, a modified polypeptide, an amino acid, a cleavage product, an antibody/antigen complex, a ligand/receptor complex, an immunoassay product, a modified chemical, a sequencing fragment, a primary metabolite or a secondary metabolite.

18. The method of claim 17 wherein producing the cleavage product includes producing a nucleic acid fragment, a nucleotide, a polypeptide, an amino acid, a fatty acid, a carbohydrate, a polysaccharide, a simple sugar, a primary metabolite or a secondary metabolite.

19. The method of claim 1 wherein producing the product includes producing an amplified nucleic acid fragment and wherein incubating includes applying a series of temperature changes suitable for sequence amplification.

20. The method of claim 1 further comprising performing analysis of the product.

21. The method of claim 20 wherein performing analysis of the product includes performing mass spectrometry, electrospray mass spectrometry, ion-spray mass spectrometry, thin layer chromatography, high performance liquid chromatography (HPLC), electrophoresis, infrared spectroscopy, fluorescent spectroscopy, gas chromatography, atomic absorption, amino acid sequence analysis or nucleic sequence analysis.

22. The method of claim 1 further comprising storing the product, analyzing the product or performing a subsequent reaction using the product.

23. The method of claim 22 wherein storing the product includes storing the nanoporous structure at room temperature, storing the nanoporous structure in a refrigerator, storing the nanoporous structure in a freezer, or storing the nanoporous structure in a pressurized or vacuum container.

24. The method of claim 1 further comprising lyophilizing the product, adsorbing the product or absorbing the product.

25. The method of claim 22 wherein analyzing the product includes performing separating, performing mass spectrometry (MS), performing matrix assisted laser desorption/ionization-time of flight mass spectrometry (MALDI-TOF MS), performing surface enhanced laser desorption ionization (SELDI), performing high performance liquid chromatography (HPLC), performing nuclear magnetic resonance (NMR) analysis, performing synthesis, performing sequencing, loading the nanoporous structure in a chromatography device, loading the nanoporous structure in an electrophoresis based separation device, loading the nanoporous structure in an electrochromatography separator device, loading the nanoporous structure in a fraction collection device, performing liquid chromatography, gas chromatography, column chromatography, thin layer chromatography, ion exchange chromatography, size exclusion chromatography, affinity chromatography or affinity electrophoresis.

26. A method comprising:
introducing a reaction mixture to a vessel;
introducing one or more nanoporous structures to the vessel; and
circulating the reaction mixture within the vessel.

27. The method of claim 26 further comprising performing electrophoresis analysis on the nanoporous structure of the one or more nanoporous structures.

28. The method of claim 26 wherein introducing a reaction mixture to the vessel includes introducing a first component and introducing a second component to the vessel.

29. The method of claim 28 further comprising introducing the first component simultaneous with introducing the second component to the vessel.

30. A system comprising:

a nanoporous structure;

a reaction mixture distributor adapted to establish contact between the reaction mixture and the nanoporous structure; and

an analysis tool adapted to analyze a product produced by the reaction mixture.

31. The system of claim 30 wherein the nanoporous structure includes a nanoporous membrane, a nanoporous strip, a nanoporous comb, a nanoporous sheet, a nanoporous filter, a nanoporous bead or a nanoporous array.

32. The system of claim 30 wherein the reaction mixture distributor includes a 96 well plate, a spotting machine, a robotic microfluidic distribution device or a microjet printer.

33. The system of claim 30 wherein the analysis tool includes a mass spectrometer, an electrospray mass spectrometer, a thin layer chromatographer, an electrophoresis device, an infrared spectroscope, a fluorescent spectroscope, a gas chromatographer, an atomic absorption device, an amino acid sequence analyzer, a nucleic sequence analyzer, a nuclear magnetic resonance (NMR) analyzer, a matrix assisted laser desorption/ionization - time of flight mass spectrometer (MALDI-TOF MS), a surface enhanced laser desorption ionization (SELDI) mass spectometer, or a high performance liquid chromatography (HPLC) analyzer.